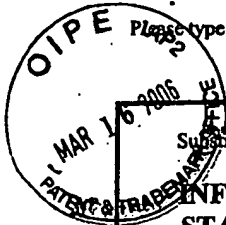
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PTO/SB/08A (08-00)

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. ROSENBERG
Group Art Unit	2674
Examiner Name	
Attorney Docket Number	IMMR-067/04US

Sheet 1 of 3

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
XW	A1	5,785,630		Bobick, et al.	07/28/1998
	A2	5,766,016		Sinclair et al.	06/16/1998
	A3	5,547,382		Yamasaki et al.	08/20/1996
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¹ Unique citation designation number.

² See attached Kinds of U.S. Patent Documents.

/Xiao Wu/

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				<i>Complete if Known</i>	
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				First Named Inventor	Louis B. ROSENBERG
				Group Art Unit	2674
Sheet	2	of	3	Examiner Name	
				Attorney Docket Number	IMMR-067/04US

XW	A33	3,497,668		Hirsch	02/24/1970
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	A44	6,278,439		Rosenberg et al.	08/2001
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	A48	6,300,937		Rosenberg	10/2001

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Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office ¹	Number ²	Kind Code ³ (if known)		
XW	B1		0 349 086	A1	Stork Kwant B.V.	01/03/1990

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		
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	C2	Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993		
	C3	Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> pp. 1-131, May 1990, archived 8/14/90		
	C4	Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11</i> , NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985		
	C5	Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990		
	C6	Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 <i>IEEE International Conference on Robotics and Automation</i> , pp. 25-44, 05/02/1993		
	C7	Snow et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989		
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¹ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

² For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

³ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁴ Applicant is to place a check mark here if English language Translation is attached.

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				Filing Date	December 9, 2003
				First Named Inventor	Louis B. ROSENBERG
				Group Art Unit	2674
Examiner Name					
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XW	C9	Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90	
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	C11	Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992	
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	C21	Minsky, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," <i>Ph.D. Dissertation</i> , MIT, June 1995, archived 7/6/95	
	C22	Jacobsen et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," <i>Intervention/ROV '91 Conference & Exposition</i> , Hollywood, Florida, May 21-23, 1991	
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	C24	IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990	
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	C28	Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987	
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	C31	Ouhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
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✓	C33	Bejczy, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987	

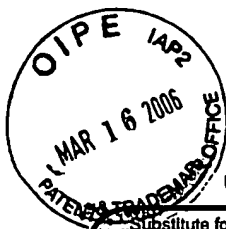
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¹ Unique citation designation number.

² Applicant is to place a check mark here if English language Translation attached.



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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 1 of 3

Complete if Known

Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2674
Examiner Name	Unassigned
Attorney Docket Number	IMMR067/04US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
XW ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		6,422,941		7/23/2002	Thomer et al.	
		6,160,489		12/12/2000	Perry et al.	
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		2,972,140		2/14/1961	Hirsch	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
XW		JP	H2-185278		7/19/1990	Taito Corporation	
XW		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
XW		JP	H7-24147		1/27/1995	Sega Corporation	
XW		JP	H5-192449		8/3/1993	Taito Corporation	

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**INFORMATION DISCLOSURE
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Sheet

2

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3

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Application Number	10/730,067
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First Named Inventor	Louis B. Rosenberg
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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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Examiner Signature	/Xiao Wu/	Date Considered	05/29/2006
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(2 of 2)

PTO/SB/08A (10-01)

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Art Unit	2674
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet **2** of **11****Complete If Known**

Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2674
Examiner Name	Unassigned
Attorney Docket Number	IMMR067/04US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
XW		4,769,763	09-1988	Trleb et al.	
		4,787,051	11-1988	Olson	
		4,791,934	12-1988	Brunnett	
		4,788,919	01-1989	Mlessler et al.	
		4,800,721	01-1989	Cemenska et al.	
		4,803,413	02-1989	Kendig et al.	
		4,811,608	03-1989	Hilton	
		4,819,195	04-1989	Bell et al.	
		4,839,838	06-1989	LaBiche et al.	
		4,849,692	07-1989	Blood	
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		4,888,877	12-1989	Enderle et al.	
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		4,942,545	07-1990	Sapia	
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		4,949,119	08-1990	Moncrief et al.	
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		4,961,267	10-1990	Herzog	
		4,962,591	10-1990	Zeller et al.	
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		5,012,231	04-1991	Felsenstein	
		5,040,306	08-1991	McMurtry et al.	
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		5,095,303	03-1992	Clark et al.	
		5,103,404	04-1992	McIntosh	

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		Filing Date	December 9, 2003
		First Named Inventor	Louis B. Rosenberg
		Art Unit	2674
		Examiner Name	Unassigned
Sheet 3 of 11	Attorney Docket Number	IMMR067/04US	

U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
XW		5,107,080	04-1992	Rosen	
		5,116,051	05-1992	Moncrief et al.	
		5,126,948	06-1992	Mitchell et al.	
		5,128,671	07-1992	Thomas, Jr.	
		5,131,844	07-1992	Marinaccio et al.	
		5,132,672	07-1992	Clark	
		5,139,281	08-1992	Openiano	
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		5,142,931	09-1992	Menahem	
		5,143,505	09-1992	Burdea et al.	
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		5,187,874	02-1993	Takahashi et al.	
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		5,209,131	05-1993	Baxter	
		5,220,260	06-1993	Schuter	
		5,223,776	06-1993	Radke et al.	
		5,228,356	07-1993	Chuang	
		5,230,623	07-1993	Guthrie et al.	
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		5,251,127	10-1993	Raab	
		5,251,156	10-1993	Heier et al.	
		5,259,120	11-1993	Chapman et al.	
		5,259,894	11-1993	Sampson	
		5,262,777	11-1993	Low et al.	

Examiner Signature	/Xiao Wu/	Date Considered	05/29/2006
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**INFORMATION DISCLOSURE
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Sheet **4** of **11****Complete If Known**

Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2674
Examiner Name	Unassigned
Attorney Docket Number	IMMR067/04US

U.S. PATENT DOCUMENTS					
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XW		5,264,768	11-1993	Gregory et al.	
		5,275,565	01-1994	Moncrief	
		5,289,273	02-1994	Lang	
		5,296,846	03-1994	Ledley	
		5,296,871	03-1994	Paley	
		5,351,692	10-1994	Dow et al.	
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		5,379,663	01-1995	Hara	
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		5,398,266	03-1995	Brimhall	
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		5,402,582	04-1995	Raab	
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		5,551,701	09-1996	Bouton et al.	
		5,570,111	10-1996	Barrett et al.	
		5,576,727	11-1996	Rosenberg et al.	
		5,587,937	12-1996	Massie et al.	
		5,589,828	12-1996	Armstrong	

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet **5** of **11****Complete If Known**

Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2674
Examiner Name	Unassigned
Attorney Docket Number	IMMR067/04US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
XW ↓		5,589,854		12-1996	Tsal	
		5,591,924		01-1997	Hilton	
		5,623,582		04-1997	Rosenberg	
		5,625,576		04-1997	Massie et al.	
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		5,643,087		07-1997	Marcus et al.	
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		5,691,898		11-1997	Rosenberg et al.	
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		5,709,219		01-1998	Chen et al.	
		5,721,566		02-1998	Rosenberg et al.	
		5,731,804		03-1998	Rosenberg	
		5,734,373		03-1998	Rosenberg et al.	
		5,739,811		04-1998	Rosenberg et al.	
		5,742,278		04-1998	Chen et al.	
		5,755,577		05-1998	Gillio	
		5,767,839		06-1998	Rosenberg	
		5,790,108		08-1998	Salcudean et al.	
		5,802,353		09-1998	Avila et al.	
		5,889,670		03-1999	Schuler et al.	
		5,897,437		04-1999	Nishiumi et al.	
		6,278,439		08-2001	Rosenberg et al.	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
XW ↓		JP	4-34810				
		GB	2254911				
		WO	9502801				
		WO	9642078				
		EP	0626634	A2			

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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/730,067
		Filing Date	December 9, 2003
		First Named Inventor	Louis B. Rosenberg
		Art Unit	2674
		Examiner Name	Unassigned
		Attorney Docket Number	IMMR067/04US
Sheet	6	of	11

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ²	Number ³	Kind Code ⁴ (if known)			
XW		WO	9532459				
		WO	9712357				
		WO	9720305				
		WO	9721160				
		WO	9731333				

Examiner Signature	/Xiao Wu/	Date Considered	05/29/2006
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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/730,067
		Filing Date	December 9, 2003
		First Named Inventor	Louis B. Rosenberg
		Art Unit	2674
		Examiner Name	Unassigned
		Attorney Docket Number	IMMR067/04US
Sheet	7	of	11

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
XW		Cursor Walso, "Designer's Corner-Useful Technology for Your Idea File," Design News, Mar. 7, 1993, p. 63.	
		"Foot-Operated Mouse," IBM Technical Disclosure Bulletin, Apr. 1986, vol. 28, No. 11.	
		"High Performance Model of the Immersion Probe," Immersion Probe-MD.TM., Immersion Human Interface Corporation.	
		"High Performance Model of the Immersion Probe." Immersion Probe-MD™, Immersion Corporation (1994).	
		"Proceedings of the IFIP Congress 65," International Federation for Information Processing, Information Processing 1965, vol. 3, New York, May 24-29, 1965, pp. 506	
		"The Personal Digitizer.TM.," Immersion Human Interface Corporation 1994.	
		"Useful Technology for Your Idea File," Design News, Mar. 7, 1994, pp. 63.	
		3D Human Interface Tool, Immersion Probe.TM., Immersion Human Interface Corporation 1994.	
		Adachi, Yoshitaka et al., "Sensory Evaluation of Virtual Haptic Push-Buttons," Technical Research Center, Suzuki Motor Corporation, Nov. 1994.	
		Adelstein Bernard D. et al., "A High Performance Two Degree-of-Freedom Kinesthetic Interface," Massachusetts Institute of Technology 1992, pp. 108-112.	
		Atkinson, William D. et al, "Computing with Feeling," Comput. & Graphics, vol. 2, No. 2-E, pp. 97-103.	
		Batter, James J. et al., "Grobe-1: A Computer Display to the Sense of Feel," pp. TA-4-188-TA-4-192.	
		Bejczy, Antal K., "The Phantom Robot: Predictive Displays for Teleoperation with Time Delay," IEEE 1990, pp. 546-550.	
		Burdea, Grigore et al., "A Portable Dextrous Master with Force Feedback," Presence: Teleoperators and Virtual Environments, MIT Press, Jun. 1991.	
↓		Burdea, Grigore et al., "Dextrous Telerobotics with Force Feedback-An Overview," Robotica 1991, vol. 9.	

Examiner Signature	/Xiao Wu/	Date Considered	05/29/2006
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**INFORMATION DISCLOSURE
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Sheet **8** of **11****Complete If Known**

Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2674
Examiner Name	Unassigned
Attorney Docket Number	IMMR067/04US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
XW		Buttolo, Pietro et al., "Pen-Based Force Display for Precision Manipulation in Virtual Environments," IEEE Mar. 1995, pp.1-8.
		Colgate J. Edward et al., Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces, Sep. 22, 1993.
		Ellis, R.E. et al., "Design and Evaluation of a High-Performance Prototype Planar Haptic Interface," ASME Dec. 3, 1993, DSC-vol. 49, pp. 55-64.
		Fischer, Patrick et al., "Specification and Design of Input Devices for Teleoperation," 1990.
		Fisher, S.S. et al., "Virtual Environment Display System," ACM Interactive 3D Graphics, Oct. 1986.
		Gotow, J.K., et al., "Preception of Mechanical Properties at the Man-Machine Interface," IEEE 1987, pp. 688-689.
		Hannaford, Blake et al., "Performance Evaluation of a Six-Axis Generalized Force-Reflecting Teleoperator," IEEE May/Jun. 1991, vol. 21, No. 3, pp. 620-633.
		Hasser, Christopher John, "Tactile Feedback for a Force-Reflecting Haptic Display," The School of Engineering, University of Dayton, Dec. 1995, pp. III-xii & 1-96.
		Herndon, J.N. et al., "The State-of-the-Art Model M-2 Maintenance System," Proceedings of the 1984 National Topical Meeting on Robotics and Remote Handling in Hostile Environments, American Nuclear Society, pp. 59-65.
		Howe, Robert D., "Task Performance with a Dextrous Teleoperated Hand System," Proceedings of SPIE, Nov. 1992, vol. 1833, pp. 1-9.
		Iwata, H., "Artificial Reality with Force Feedback: Development of Desktop Virtual Space with Compact Master Manipulator," Computer Graphics, vol. 24, No. 4, 1990, pp. 165-170.
		Iwata, Hiroo et al, Volume Haptization, IEEE 1993, pp. 16-18.
		Jacobsen, S.C. et al., "High Performance, High Dexterity, Force Reflective Teleoperator II," ANS Topical Meeting on Robotics & Remote Systems, Albuquerque, New Mexico Feb. 24-27, 1991, pp. 1-10.
↓		Kelley, A.J. et al., "MagicMouse: Tactile and Kinesthetic Feedback in the Human-Computer Interface Using an Electromagnetically Actuated Input/Output Device," Dept. of Elec. Engineering, Univ. of British Columbia, 1993, pp. 1-27.

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**INFORMATION DISCLOSURE
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Sheet 9 of 11

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Art Unit	2674
Examiner Name	Unassigned
Attorney Docket Number	IMMR067/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
XW		Kilpatrick, Paul Jerome, 1947, "The Use of a Kinesthetic Supplement in an Interactive Graphics System", Xerox University Microfilms, Ann Arbor, Michigan 48106, 1976, pp. 1-175.
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Examiner
Signature

/Xiao Wu/

Date
Considered

05/29/2006

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet **10** of **11****Complete If Known**

Application Number	10/730,067
Filing Date	December 9, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2674
Examiner Name	Unassigned
Attorney Docket Number	IMMR067/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
XW		Rosenberg, L.B., "Commercially Viable Force Feedback Controller for Individuals with Neuromotor Disabilities", AL/CF-TR-1997-0016, United States Air Force Armstrong Laboratory, May 1996.
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Signature

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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/730,067
		Filing Date	December 8, 2003
		First Named Inventor	Louis B. Rosenberg
		Art Unit	2874
		Examiner Name	Unassigned
Sheet 11 of 11	Attorney Docket Number	IMMR067/04US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
XW		Tavkhelidze, D.S. "Kinematic Analysis of Five-Link Spherical Mechanisms," Mechanism and Machine Theory 1974, vol. 9, pp. 181-190.	
		Wiker, Steven F. et al., "Development of Tactile Mice for Blind Access to Computers: Importance of Stimulation Locus, Object Size, and Vibrotactile Display Resolution," Proceedings of the Human Factors Society 35th Annual Meeting 1991, pp. 708-712.	
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↓		Yokokohji, Y., "What You Can See is What You Can Feel--Development of a Visual/Haptic Interface to Virtual Environment," Proc. of VRAIS '96, IEEE 0-8186-7295-1, 1996, pp. 46-54.	

Examiner Signature	/Xiao Wu/	Date Considered	05/29/2006
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